

XXXVIII. On *Evania* and some allied Genera of Hymenopterous Insects. By J. O. WESTWOOD, F.L.S. &c.

[Read November 7, 1836, and February 1, 1841.*]

THE family *Evaniadæ* of Leach, or the *Evaniales* of Latreille, comprises a group of parasitic insects of but small extent, but which exhibits several very remarkable variations of structure.

The typical genus *Evania* was established by Fabricius in the "Systema Entomologiæ" in 1775, having the *Sphæx appendigaster* of Linnæus as the type, but comprising, as a second species, an insect of this country belonging to the genus *Ceropales*, observed by Fabricius in the collection of Sir J. Banks. Subsequently Latreille instituted another genus, which, in his early works, he named *Gasteruption*, but Fabricius having in his "Systema Piezatorum" established the same genus under the more pleasing name of *Fœvus*, Latreille subsequently adopted the latter name. The last mentioned author also at the same time proposed another genus, *Pelecinus*, founded upon a remarkable insect inhabiting North America. Jurine added a fourth genus, *Aulacus*, established upon an European species, and Latreille, in the "Familles Naturelles" and "Règne Animal," second edit., introduced a fifth genus, *Paxylloma*, founded upon a French species, but of which the characters were very slightly indicated. In addition to these, the raising of one of the sections of the genus *Evania* into a distinct genus, under the name of *Brachygaster*, by Dr. Leach, (and under that of *Hyptia* by Illiger,) and the establishment of the Australian genus *Megalyra* by myself in "Griffith's Animal Kingdom," comprise all that has hitherto [1836] been done relative to the generic distribution of this group.

In the "Histoire Naturelle, &c." vol. xiii. Latreille placed this family amongst the "*Tripiles*," between the *Ichneumonidæ* and *Cynipidæ*, or *Gallflies*; but in his "Genera Crustaceorum et Insectorum" he placed it at the head of the *Pupophaga*, immediately preceding the *Ichneumonidæ*, in which situation it is retained in all his subsequent works.

Jurine divided the *Hymenoptera* into three principal sections, the first having the abdomen sessile, comprising the *Tenthredinidæ* and *Siricidæ*; the second having the abdomen pedunculate, "petiolo supra thoracem infixo," containing the genera *Evania*, *Fœvus*,

* Note. In the lists of species of the different genera described below, the still more recent additions, up to the present time, so far as I am acquainted therewith, have been introduced.—J. O. W., July 12, 1844.

Aulacus, and *Stephanus*; and the third having the abdomen pedunculate, “petiolo ponè thoracem infixo,” comprising the remainder of the order.

By Nees von Esenbeck, however, this family was placed at the end of the *Ichneumones adsciti* and immediately preceding the *Chalcididæ*, with the observation “*Familiæ Evanielium* verus character non tamen in oris et alarum fabrica, quam in abdominis insertione quærendus, cui quidem et alii characteres respondent, tum in oris, tum maxime in alarum structura et textura obvii. Alæ in *Evania* genere, nervis deminutis, ad eas *Pteromalinarum* et *Proctotruperinarum* propius accedunt.”—(Hym. Mon. 1, 302.)

Mr. Haliday, in some observations upon the distribution of the *Pupivora* (Ent. Mag. vol. i. 343, note i), thinks it would be rash to divide this family into families, [as Mr. Shuckard,* and Mr. Haliday himself, but less extensively,† have since proposed,] the chain being so much interrupted from the small number of genera comprised in it; adding, “the family besides, is, in its present form, far too convenient a receptacle for all stray articles to be lightly resigned. I am obliged to enrich it further, at the expense of the *Ichneumones*, with two genera—*Stephanus* and *Plancus* [*Paxylloma*],—which *Pelecinus* and *Fœnus* seem respectively to reclaim: of the latter I am more doubtful; for the other I have the authority of Jurine and Spinola.” Which latter observation he again repeats in the third volume of the same work, p. 22.

The investigation of the characters of these two genera subsequently detailed will enable us to judge of the propriety of this suggestion.

It is impossible to examine the structure of the insects of which this family is composed without arriving at the conclusion that it is evidently an osculant group, combining in itself not only the representatives of several other families, but also several distinct and anomalous forms. The paucity of species in the family, the strong variations which occur in various essential organs—as the antennæ, palpi, neuration of the wings, and especially the ovipositor, and the singularity of structure exhibited by various of the less important organs, as the elongation of the abdomen in *Pelecinus*, its singular position in *Evania*, the curious striation of the thorax in *Aulacus*, the form of the mandibles in *Fœnus*, and of the labial palpi in *Evania*,—all tend to prove that in comparison with the *Ichneumones genuini* the *Evaniidæ* are essentially an aberrant group.

Acting therefore upon the rule laid down by Mr. Mac Leay in

* Entomologist, p. 119.

† Hym. Synops. in Suppl. Mon. Alysia, 1839.

the "Horæ Entomologicæ" relative to such groups, I do not here propose to detail any character for the family, and shall therefore only observe, that generally the antennæ are composed of only thirteen or fourteen joints, the abdominal peduncle is inserted at a considerable elevation upon the posterior part of the thorax, and the mandibles are toothed internally.*

From the various families of which the section *Pupivora* of Latreille is composed, with the exception of the *Ichneumones adsciti*, the *Evaniidæ* are easily distinguished. Thus the neuration of the wings will distinguish them from the *Chalcididæ*; the same character and the paucity of joints in the antennæ will separate them from the *Ichneumones genuini*, and the structure of the ovipositor from the *Cynipidæ*, *Proctotrupidæ*,† and *Chrysididæ*. From the *Ichneumones adsciti* however, at least from the most aberrant species of that group, the line of demarcation is less evident, since we find some of the *Aphidii* in that family possessing antennæ with not more than fourteen joints, and the genus *Paxyloma*, under its various names of *Planicus* and *Hybrizon*, has been placed both amongst the *Evaniidæ* and the *Ichneumones adsciti*.

With these preliminary observations I proceed to a review of the genera *Evania* and its allies, proposing to insert, under each, descriptions of such new species as have occurred to me, commencing with those genera which have the abdomen destitute of an exerted ovipositor.

EVANIA, Fabr.

The chief character of this genus consists in the very small size of the abdomen, which is greatly compressed, of a triangular form, and attached to the thorax, rather above the centre of the metathoracic scutellum (and not at its posterior extremity as in most other *Hymenoptera* ‡), by a peduncle about as long as the

* I have not made use of the number of joints in the palpi as a character of the family, since it is evident, from analogy with the aberrant *Ichneumonidæ*, that variation in their number is a necessary consequence of such aberration; a remarkable proof of this occurs in *Evania*, some species of which, even in its restricted state, possess apparently only five joints to the maxillary palpi and others six. *Vide* Lat. Gen. 3. 251. 2.

† The relationship of *Pelecinus* to *Proctotrupes* will be considered in the observations on the former genus.

‡ This peculiarity, although it appears at first sight anomalous, is dependent upon the excessive development and thickness of the metathorax, of which the præscutum is reduced to a very slender dorsal piece, having the posterior wings attached at its sides; the metascutellum and postscutellum being confluent, although the limits of the metascutellum are indicated (of a triangular form and small size,

remainder of the abdomen. The ovipositor is not exerted. The antennæ are thirteen-jointed in each sex, the basal joint in the females being more elongated, so as to form, with the remainder, a considerable elbow. Jurine describes the antennæ as being thirteen or fourteen-jointed according to sex, but incorrectly.

The species of this genus were discovered (as we learn from Kirby and Spence*) to be parasitic upon the species of *Blattidæ*. The correctness of this statement has been confirmed to me by Mr. R. E. Lewis, who has found them on board the ship in which he sailed to Van Diemen's Land, and which was much infested with *Blatta orientalis*; and hence the *Evaniæ minuta* and *fulvipes*, having been found in situations where the indigenous *Blatta Lapponica* abounds, are alone regarded by Mr. Stephens as strictly entitled to be considered indigenous; the typical species *Evania appendigaster*, which is attached to the *Blatta orientalis*, being considered an imported insect.—(Illustr. of Brit. Entomology, Mand. vol. vii. p. 118.)

Latreille introduced two primary divisions into this genus, founded upon the distinctness or obliteration of the apical nerves of the wings and the length of the second and third joints of the antennæ. These divisions Dr. Leach regarded as generic, and accordingly, in the Edinburgh Encyclopædia, gave the name of *Brachygaster* to the second section, having the *Evania minuta* as its type. (In the British Museum Cabinet the genus however stands under the name of *Coranila* of Leach's Manuscripts.) This genus *Brachygaster* has been retained by Mr. Stephens. Illiger, however, in his edition of Rossi, had previously named it

terminating at the place of insertion of the abdomen) by an impression; the metapostscutellum being exceedingly developed. (Mod. Class. of Insects, vol. ii. p. 134, fig 74, 4 and 5.) The metasternum is also very remarkable, terminating in a strong furcate process, of which the points are recurved and fitting into the posterior coxæ.

* In the third volume of the Introduction to Entomology (p. 580) it is stated, that "the history of *Evania*, the parasite of the *Blattæ*, had been traced by Dr. Reid, who did not however live to give his discoveries to the world; it was however hoped that they would not be lost, being in most able hands." In the fourth volume of the same work (p. 216) it is however stated, that "the late Dr. Arnold, whose tact for observation with regard to the manners and economy of insects has rendered his loss irreparable, discovered that the remarkable parasitic genus *Evania* F. was appropriated to the all-devouring *Blattæ*: whether it attacked it in its egg or larva state the author had not been informed. This little benefactor is here extremely rare, at least in the country; perhaps in towns where the cock-roach abounds it may be more common." I am however indebted to Mr. W. S. Mac Leay for the information that it is within the egg-pouch of the *Blattæ* that the *Evania* is parasitic.

Hyptia. Dr. Nees von Esenbeck has however regarded its characters merely as specific ones.

Erania, in its restricted state, comprises several species very closely allied together, and the name of *Evania appendigaster* having been indifferently applied to them, much confusion has been thereby occasioned. Latreille endeavoured, but unsuccessfully, to rectify the error, which was accomplished by Illiger. Mr. Curtis however, followed by Mr. Stephens, has again renewed the confusion, by giving the *fuscipes* of Illiger (*appendigaster*, Latr.) under the name of *flavicornis*—(describing it as possessing rufous antennæ)—and by giving the *lævigata* of Latreille as identical with the Linnæan *appendigaster*; whilst the Marquis Spinola has reversed the synonymy, by giving *fuscipes* and *appendigaster* as identical, and *lævigata* as distinct. Fabricius gives, as the localities of *Evania appendigaster*, Southern Europe, Cape of Good Hope, and New Holland; and Mr. Curtis adds America, Jamaica, the Isle of France, Spain, and England, evidently confusing the true *lævigata* and *appendigaster*, and probably several other species.

Sp. 1. *Evania appendigaster*, Linn. (*Sphex a.*). Illiger, N. ab Esen., Curtis, Stephens, nec Latreille nec Spinola.

In the Linnæan cabinet the specific ticket of *E. appendigaster* is attached to a black insect, with the face neither punctured nor striated; the mesothorax nearly smooth, with only a very few punctures scattered about the scutum, with an impressed oblique line on each side, and a shorter straight one between it and the base of the wings; the peduncle of the abdomen is also slightly contracted before the tip, the sides immediately in front of the contraction being slightly flattened out. It is also smooth, being neither punctured nor striated.

I have carefully examined specimens from England, Germany, the Island of Mauritius, Mozambique, and Brazil, amongst which I cannot perceive any character to warrant their specific separation.

Sp. 2. *Evania lævigata*, Latreille, Olivier, Illiger.

The Marquis Spinola gives Mexico, New Orleans, Brazil, the Cape of Good Hope, Egypt, Greece, Sardinia, Coromandel, and New Holland, as places from which he has received *E. lævigata*.

Sp. 3. *Evania fuscipes*, Illiger.

Syn. *Ev. appendigaster*, Latreille, Oliv., Jurine, Panzer.
Ev. flavicornis, Curtis, Stephens.

Closely allied to the two preceding species are the two following:—

Sp. 4. *Evania Cubæ*, Guerin, Icon. R. An. Ins. pl. 65, fig. 1.

Inhabits the island of Cuba, but of which the description is not yet published. The abdomen of the male is figured of a more ovate form, and terminated by a small conical appendage, whilst that of the female is much less strongly securiform.

Sp. 5. *Evania Desjardinsii*, Blanchard, Hist. Nat. Ins. vol. iv. p. 299.

Inhabits the Isle of France, “le seul caractere” consists in the abdomen, which “n’est plus complètement securiforme, mais il est beaucoup moins large et presque cylindrique, quoique toujours très fortement comprimé lateralement.”

Sp. 6. *Evania princeps*, Westw.

Tota nigra, facie argenteo-sericea longitudinaliter striata, thorace rude punctato, alarum anticarum vena radiali ad apicem recurvo ♂ ♀.

Long. corp. lin. 7, exp. alar. lin. $10\frac{1}{2}$.

Habitat in Nova Hollandia.

In Mus. Dom. Hope, Newman et nostr.

Gigas in genere. Tota nigra. Caput, thorax et abdominis petiolus rudè punctata, metathorace areolato, facie longitudinaliter striata et lateribus capitis thoracisque argenteo-sericeis. Mandibulæ intus 3-dentatæ, palpi labiales articulis simplicibus. Alæ infuscatae, vena radiali ad apicem recurvata. Furca metasterni brevissima recta. Abdomen valdè compressissimum, subtriangulare. Differt mas facie minus striata.

Sp. 7. *Evania Abyssinica*, Westw.

Nigra, thorace et petiolo abdominali rufis, pedibus piceis, facie punctata ♀.

Syn. *Evania thoracica*, Klug. MSS., nec *Ev. thoracica*, Blanchard.

Long. corp. lin. $3\frac{3}{4}$, exp. alar. lin. $6\frac{1}{4}$.

Habitat in Abyssinia.

In Mus. nostr. Communic. cel. Dom. Klug.

Magnitudo *Ev. appendigastris*. Antennæ longæ nigrae, subtus piceae. Caput nigrum, facie parum argenteo-sericea, punctis parvis impressis, haud confluentibus, carinaque abbreviata mediana sub antennas. Mandibulæ nigrae, apice piceo. Palpi piceo-rufi. Thorax ferrugineus, tenue punctatus, metathorace

areolato; petiolus abdominis ferrugineus, haud punctatus, utrinque striola tenui longitudinali. Abdomen nigrum, compressum, nitidum, fere rotundatum. Pedes quatuor antici picei (femoribus subtus ferrugineis), postici nigri, trochanteribus basi piceis. Alæ fere hyalinæ, venis nigris, vena marginali (cellulam marginalem formanti) ad apicem fere recta et cum margine apicali alæ fere pærellela.

Sp. 8. *Evania dimidiata*.

Syn. *Evania dimidiata*, Spinola, in Ann. Ent. Soc. de France, tom. vii. p. 439, and Rev. Zool. 1840, p. 247.

Habitat in Ægypto.

Obs. This species appears to differ from *E. Abyssinica* in its smaller size ($2\frac{1}{2}$ lin.), black antennæ and legs, pale palpi, slightly punctured face, ferrugineous mandibles, and punctured peduncle. They are however stated by the Marquis Spinola, in the Rev. Zool. 1842, p. 190, to be identical.

Sp. 9. *Evania Tasmanica*, Westw.

Nigra punctatissima, facie tenuiter longitudinaliter striata, furcâ metasterni brevi rectâ, petiolo striato ♀.

Long. corp. lin. $4\frac{1}{2}$, exp. alar. 8.

Habitat in Terra Van Diemenii.

In Mus. Dom. Hope.

Tota nigra, rude punctatissima. Facies sub antennarum insertionem leviter striata. Petiolus abdominis striatus. Abdomen compressissimum, triangulare. Alæ hyalinæ, area marginali sub-ovata, venis cubitali et discoidali fere obsoletis. Antennæ et pedes nigri. Mandibulæ intus obtuse 3-dentatæ. Palpi labiales articulo 3tio apice dilatato ovato.

Sp. 10. *Evania punctata*.

“ E. nigra albido-villosa, capite striato, vertice thoraceque crasse punctatis, alis subhyalinis, nervis nigris; antennarum basi, palpis, et pedibus quatuor anticis fere omnino pallide fuscis, abdominis petiolo valde rugoso. Long. corp. 9 millim.”

Habitat in Morea.

Syn. *E. punctata*, Brullé, in Exped. Scient. de Morée, p. 378, No. 833.

Obs. This species appears scarcely to differ from *E. fuscipes*.

Sp. 11. *Evania fascialis*.Syn. *Evania fascialis*, Spinola, in Rev. Zool. 1842, p. 188.

Habitat in Mexico.

Sp. 12. *Evania Chilensis*.Syn. *Evania Chilensis*, Spinola, in Rev. Zool. 1842, p. 189.

Habitat in Chili.

Sp. 13. *Evania antennalis*, Westw.

Nigra, antennarum articulis 3 et 4 luteis, facie longitudinaliter striata, petiolo oblique rugoso, metasterno parum furcato.

Long. corp. lin. 3.

Habitat in India Orientali, Bombay. Dom. W. Elliott.

In Mus. Britann.

Nigra, antennis crassiusculis et breviusculis; articulis 3 et 4 luteis, facie genisque longitudinaliter striatis, illa carina mediana instructa; fossulis duabus pro receptione articuli basalis antennarum distinctis latis, at parum profundis; thorace punctato, metathorace hexagonaliter areolato, griseo-pubescenti; petiolo abdominis elongato, oblique rugoso; abdomine compressissimo, latè ovato, apice acuto, metasterno brevi, parum furcato; trochanteribus magnis, glaberrimis, tibiis anticis, tarsisque 4 anticis piceis; alarum venis fere ut in *E. lævigata* cellula marginali postice vix angulata.

Sp. 14. *Evania compressa*, Fabr. Syst. Piez. p. 178.

Habitat in America Meridionali.

Sp. 15. *Evania nigricornis*, Fabr. Syst. Piez. p. 179.

Habitat in America.

Sp. 16. *Evania caspia*, Eichwald, in Reise auf d. Casp. Meere, &c. Bd. 1, Abth. 1 and 2.

Sp. 17. *Evania affinis*, Le Guillou, in Rev. Zool. Soc. Cuvier. 1841, p. 322.

“*E. appendigastræ* affinis, sed minus pilosa, atra; lamella longitudinali et triangulari supra thorax; unguiculo terminali ultimi tarsi bifido et fulvo; thorace profundè punctato; abdomine lævi et rufo.”

Long. corp. 7½ mill.

Habitat Hamoa (Arch. des Navigateurs).

Sp. 18. *Evania (Hyptia) minuta*, Fabr. Ent. Syst. 2, 194, Coq.
pl. IV. fig. 9.

Habitat in Europa.

Sp. 19. *Evania (Hyptia) petiolata*.

Syn. *E. petiolata*, Fabr. Ent. Syst. Suppl. p. 242.

Habitat in Insulis Americæ.

Sp. 20. *Evania (Hyptia) rufipes*.

Syn. *E. rufipes*, Fabr. Syst. Piez. p. 179.

Habitat in America Meridionali.

Sp. 21. *Evania (Hyptia) pygmæa*.

Syn. *E. pygmæa*, Fabr. Syst. Piez. p. 180.

Habitat in America Meridionali.

Obs. The last three species are now preserved in the Royal Museum of Copenhagen, and have been lately examined by Dr. Erichson, who has been so kind as to supply me with notes respecting them as well as numerous other Fabrician species.

Sp. 22. *Evania (Hyptia) Javanica*, Westw.

Tota nigra punctata, petiolo oblique striato, brevi; alarum venis cubitali et discoidali oblitteratis ♀.

Long. corp. lin. 3, expans. alar. lin. 5.

Habitat in Insula Java.

In Mus. Dom. Hope.

Tota nigra, capite mesothoraceque punctatis, metathorace areolata. Facies punctata, punctis irregularibus et plus minusve confluentibus. Scutum mesothoracis utrinque linea oblique impressa, ex angulis anticis ad medium fere ducta, conjunctim litteram V fere formantibus. Furca metasterni brevis, fere recta. Petiolus abdominis brevis (vix tertiam partem abdominis longitudine æquans), paullo curvatus, oblique striatus. Abdomen triangulare, compressissimum, segmentis apicalibus dorso parum villosis. Alæ hyalinæ, stigmatibus venisque nigris, harum cubitali et discoidali omnino oblitteratis.

Sp. 22. *Evania (Hyptia) ruficornis*.

Syn. *Evania ruficornis*, Fabr. Syst. Piez. p. 179.

Habitat in America Meridionali.

Sp. 24. *Evania (Hyptia) fulvipes*.Syn. *Evania fulvipes*, Curtis, Brit. Ent. pl. 257.

Habitat in Anglia.

Obs. This species is apparently very closely allied to *E. (Hyptia) minuta*.*Sp. 25. *Evania (Hyptia) bicolor*, Westw.

Ferruginea, abdomine piceo-nigro, antennis pedibusque nigris.

Long. corp. lin. $2\frac{1}{2}$, expans. alar. lin. $5\frac{1}{2}$.Syn. *Coranila thoracica*, Leach, MSS. in Brit. Mag.[*Hyptiam thoracicum*, Shk. Entomol. p. 120.]*Evania thoracica*, Blanchard, Hist. Nat. Ins. vol. iv. p. 299.

Ferruginea, punctata, abdomine lævi nitido. Caput piceum, vertice rufescenti. Antennæ in medio crassiores, nigræ, apice articuli basalis piceo. Thorax ferrugineus, postice pilis argenteis vestitus. Pedunculus abdominis niger, apice piceo. Abdomen piceo-nigrum. Alæ leviter tinctæ, stigmatibus nigro, vena cubitali alteraque brachiali abbreviata, cellulis destitutæ. Pedes nigri, geniculis piceis.

Obs. I believe it is this species which Abbot has delineated in the twelfth volume of his unpublished drawings in the British Museum Library, Number X. 75, from a specimen taken on the 27th August in Oakwoods, in Burke County. He figures it as being $3\frac{1}{2}$ lines long by 5 in expanse, and of a red brown colour, with the legs and antennæ darker.

Sp. 26. *Evania (Hyptia) reticulata*.

Black, first joint of the antennæ and anterior pairs of feet piceous.—(Say, in Journ. Nat. Hist. Soc. Boston, 1836, vol. i. p. 223, *Brachygaster r.*)

Inhabits Indiana.

“Body black, reticulate with large punctures; antennæ not longer than the trunk, with close set subequal joints; first joint subclavate, piceous, longest; second joint not longer than broad, shortest, about half the length of the third; punctures on the posterior face of the metathorax, more dilated than those of the thorax; wings hyaline, nervures fuscous; petiole about as long as the

* Indeed, according to the Marquis Spinola, it would appear to be only a variety of that species.

abdomen, punctured; abdomen orbicular, polished, unpunctured; feet, two anterior pairs, piceous."

Length about one-fifth of an inch.

Sp. 27. *Evania (Hyptia) Xanthops*.

Syn. *Brachygaster Xanthops*, Shk. in Entomologist, p. 120.

Habitat in Brasilia.

Sp. 28. *Evania (Hyptia) ruficeps*.

Syn. *Hyptiam ruficeps*, Shk. in Entomologist, p. 121.

Habitat in Brasilia.

Sp. 29. *Evania (Hyptia?) animensis*.

Syn. *Evania animensis*, Spinola, in Rev. Zool. 1840, p. 247.

Found in gum anime. The fusiform antennæ, and presence of radial and cubital cells, seem to separate it from all the other known species. Mr. Kirby also mentions an *Evania* observed by him in gum. Introd. to Ent. iv. p. 556. I also possess a distinct species in gum anime, but cannot determine its characters.

Sp. 30. *Evania (Hyptia) crassicornis*.

Syn. *Evania crassicornis*, Spinola, in Rev. Zool. 1842, p. 189.

Habitat in Colombia.

Obs. *Evania tinctoria, fasciata, histrio, maculata, punctum, ruficollis, sessilis*, and *variegata*, of the early works of Fabricius, belong to the genus *Ceropales*.

PELECINUS, Latreille.

This genus is at once distinguished from *Evania*, with which it agrees in the hidden ovipositor, in having the abdomen greatly elongated, that of the females being at least six times the length of the head and thorax, slender and cylindrical, the basal joint being the thickest. In the opposite sex (Pl. XIV. fig. 1) the abdomen is about twice the length of the head and thorax, and gradually clavate, the basal joint being very long. Latreille, unaware of this sexual diversity, gave the male, as a distinct species, under the name of *Pel. clavator*. The abdomen is attached to the metathorax much lower than in *Evania*, and the posterior tibiæ are remarkably dilated in the females into an elongate ovate mass. In the opposite sex they are more slender. The basal joint of the

two posterior tarsi is very short, the fourth also is short and somewhat dilated, the terminal joint being inserted before the extremity so as to sit obliquely. The antennæ, which are described by Fabricius (Syst. Piez. p. 111) as 12-jointed, and by Latreille (Gen. Cr. 3, 255) as 13-jointed, are distinctly 14-jointed in each sex, the basal joint being short and thick, the second much shorter and cup-shaped, and the remaining twelve long, very slender, and cylindrical. In both sexes they are annulated with white near the extremity.

The parts of the mouth of this genus not having hitherto been figured, I have thought it might be serviceable to add figures of them, more especially as it will be seen that the descriptions given both by Fabricius and Latreille in the works above quoted (and copied by Saint Fargeau and Serville into the *Encyclopedie Méthodique*, vol. x. p. 29) do not at all correspond with my figures.* Thus Fabricius describes the mandible as “*intus tridentata, apice acuta.*” Latreille states the maxillary palpi to be 6-jointed, and the labial 4-jointed, whilst Fabricius describes the same organs as being respectively 5-jointed and 4-jointed; whereas they are in fact respectively † 5-jointed and 3-jointed. (Plate XIV. fig. 2*a*, represents the head of the female seen in front; 2*b*, the same seen side ways; 2*c*, the labrum; 2*d*, the mandible; 2*e*, the maxilla; and 2*f*, the labium and its palpi.) The neuration of the wings in this genus is very unlike that of any other Hymenopterous genus, as will be seen from my figure; in which the parts dotted are only very slightly indicated, and can be seen only by shifting the wings in various directions. With the view of exhibiting the manner in which the variation in the position of the veins in this and several allied genera is effected I have given a figure of the wing of *Pelecinius*, Pl. XIV. fig. 1*a*, and have added figures of those of *Monomachus* (Pl. XIV. fig. 5*a*), *Fœnus* (Pl. XV. fig. 2), and *Proctotrupes* (Pl. XIV. fig. 10); the last named genus being considered by Dr. Erichson as brought into close relation with *Pelecinius* by means of *Monomachus*. The analogous veins in the figures of the wings are similarly lettered. That *Proctotrupes* is indeed closely allied to *Pelecinius* is perhaps unquestionable; ‡ and, in

* Of the correctness of these figures I will only observe, that they have been made from an examination of many female specimens of *Pel. politurator*, and from actual dissection of two individuals.

† It appears to me that Latreille has mistaken a slight swelling near the base of the fourth joint for an articulation.

‡ Mr. Haliday (Hym. Synops. ii. in Hym. Brit. Alysia) has formed *Pelecinius* into a family of the *Oxyura*, separating it from the *Evaniadae* on account of its trochanters being exarticulated.

retaining the latter genus in the present family, I have, perchance, been too much influenced by the authority of Latreille, and have too much relied upon the general resemblance exhibited by the veining of the wings and singular hind feet of *Pelecinus* and *Fœnus*, which may prove but analogous relations, although *Evania* proves to us that the veins of the wings even in the typical genus may be subject to become obsolete. In one character, indeed, *Proctotrupes* differs from *Pelecinus*, the former having only four joints to the maxillary palpi, whilst they are 5-jointed in the latter.*

The tarsal ungues are entire in *Pelecinus*. The male differs only from the female in the structure of the abdomen, as noticed above; unlike the latter, in which the segments are of nearly equal length, the basal joint alone equals three-fourths of the entire length of the abdomen. The basal portion is slender and cylindric, but about the middle of the segment there is a kind of knot which has the appearance of an articulation, and beyond this knot the segment is gradually incrassated. The four remaining segments are very short.

This genus was instituted by Latreille in the "Bulletin de la Société Philomatique," No. 44 (1797—1801), and was adopted by Fabricius in his "Systema Piezatorum," from the third volume of Latreille's "Histoire Générale," &c. p. 329.

: Sp. 1. *Pelecinus politurator*.

The typical species was originally figured by Drury † under the name of *Ichneumon polyturator*, the latter name being evidently a misprint for *politurator*, being intended to apply to the highly polished appearance of the insect. This name was however changed by Latreille and Fabricius into the unmeaning title *polyccrator*, which must of course be rejected. It was described by Fabricius under the name of—

Ichneumon polyccrator, Fabr. Sp. MS. 1, 430, No. 63; Mant. Ins. 1, 265, 75; Gmelin, p. 2691, 141.‡

Pelecinus polyccrator, Latr. Fabr.

Drury received his specimen from Jamaica, but Fabricius gave

* Mr. Curtis figures them in *Proctotrupes* as 5-jointed, but in his description he expresses his doubts as to this being their true structure. My dissections (Introd. to Mod. Class. vol. ii. p. 167, fig. 78, 4) agree with the description of Latreille, Haliday, and Nees von Esenbeck.

† Illustr. Exot. Ent. vol. ii. pl. 40, fig. 4.

‡ Latreille, Hist. Nat. 13, 195, refers to Linnæus, probably by mistake for Gmelin.

India as the locality of this species, from the information of Dr. Fothergill. This, however, is incorrect, it and all the other species of the genus being inhabitants of America.

The following is a description of the male, from specimens in the collection of the British Museum, and which is represented in Pl. XIV. fig. 1.

Black, shining; four anterior tibiæ and tarsi brown; two basal joints of posterior tarsi black, the remainder dirty white; the wings having the costa and apex brown, the costa being the darkest part.

Length 7 lines, expansion of wing $10\frac{1}{2}$ lines.

Specimens of the males are also preserved in the Royal Museum of Berlin, where, upon the authority of Dr. Klug, they are ticketed *Pel. clavator*, Latr., of which the following is the description:—

“*Pelecinus niger*, antennarum articulo 10mo tarsorumque duorum posticorum articulis intermediis albidis, abdomine clavato.”
—Latr. in Dict. d’Hist. Nat. edit. 2.

As, however, the habitat given is Brazil, it is perhaps the male of another species. The specific name is at all events inappropriate, being applicable to the males of all the species both of this and the following genus.

I have received many specimens of *Pelccinus politurator* from North America, and Dr. Harris has introduced it into his catalogue of the insects of Massachusetts, as well as *Pel. clavator*. It is also figured by Say in his American Entomology, vol. i. pl. 15, who states that it is not uncommon in various parts of the United States.

Since this memoir was prepared, the Baron de Romand has published a note on this genus in Guérin’s Magasin de Zoologie, 1840, Ins. pl. 48 and 49, figuring the males of two supposed species under the names of *P. polycerator* and *polyturator* (not perceiving their identity and relying on the different spelling of the name, as I had written the latter name on the sketch of the male which I gave him when in London).

Dr. Klug, in his description of the species of this genus in the Berlin collection, describes three varieties of *P. politurator* varying in the punctuation of the scutellum and metathorax, from North America, Mexico, Columbia, and Brazil.

In the “*Delectus Animalium*,” &c., of Drs. Spix and Von Martius, Dr. Perty has described three species as belonging to this genus, the third of which, however, is referable to *Mono-machus*. The following is the description of the two other species:—

Pelecinus tibiator, Perty, Del. An. Art. Bz. p. 131.

(*Pel. polycerator*, id., pl. 26, fig. 8.)

“Niger, abdomine longissimo filiformi, alis albidis, stigmate
“et margine antico brunneis, tibiis posticis incrassatis,
“antennæ annulo albo.

“Long. corp. lin. $17\frac{1}{2}$, abd. $14\frac{1}{2}$, lat. $11\frac{1}{2}$.

“A *Pel. clavatore*, Latr., differt præter alias notas etiam magnitudine.”

Note.—Dr. Klug gives this as identical with *P. politurator*.

Sp. 2. *Pelecinus dichrous*, Perty, loc. cit. Klug, in Germar, Zeitsch. d. Ent. iii. p. 383.

“Alis pellucidis, venis longitudinalibus et stigmate brunneis,
“thorace pedibusque sordide sanguineis, abdomine nigro,
“tibiis posticis clavatis. Magnitudo *Pel. tibiatoris*.”

Syn. *Pel. clavator* ♀, Spinola, in Guér. Mag. de Zool. 1842, pl. 93, fig. 1.

Sp. 3. *Pelecinus Guerini*, De Romand, in Guérin, Mag. de Zool. 1840, fig. 2 ♀, pl. 93, fig. 2 ♂.

Sp. 4. *Pelecinus rufus*, Klug, in Germar, Zeitsch. d. Ent. iii. 384, tab. 2, fig. 2, 3.

Habitat in Brasilia.

Sp. 5. *Pelecinus thoracicus*, Klug, in Germar, Zeitsch. d. Ent. iii. 384, pl. 2, fig. 5.

Habitat in Mexico.

Sp. 6. *Pelecinus annulatus*, Klug, in Germar, Zeitsch. d. Ent. iii. 384, pl. 2, fig. 4.

Habitat in Monte Video.

Sp. 7. *Pelecinus Duponchellii*, De Romand, Guér. Mag. d. Zool. 1842, pl. 86, fig. 1, 1 b.

Sp. 8. *Pelecinus Spinolæ*, De Romand, in Guér. Mag. d. Zool. 1842, pl. 86, fig. 2.

MONOMACHUS, Klug, MSS.

No characters of this genus have been hitherto published, nor am I aware that any of the species have been described, except the one mentioned above by Perty. In the elongated form of the abdomen, the concealed ovipositor of the female, and the clavation of the abdomen of the males, it approaches *Pelecinius*; but in the structure of the head, antennæ, posterior tibiæ, and tarsi, and the neuration of the wings, it is very distinct from that genus. I have not had an opportunity of examining the trophi. The following are its principal characters:—

Caput crassum, genis plus minusve dilatatis (Pl. XIV. fig. 3a, caput maris; 4a, caput feminæ). *Mandibulæ* magnæ, validæ, intus 1-dentatæ. *Palpi* graciles. *Antennæ* elongatæ ♂, 14-articulatæ, corpore toto longiores (fig. 5b), articulo basali parvo crasso, 2do minuto, reliquis cylindricis elongatis, longitudine æqualibus; ♀ 15-articulatæ (fig. 4b), articulis versus apicem gradatim crassioribus et brevioribus. *Thorax* oblongo-ovatus. *Collari* valde conspicuo obtrigono. *Alæ* (fig. 5a) nervis distinctis, cellulâ unicâ marginali parvâ elongato-triangulari, cellulisque duabus submarginalibus, quarum prior grandis, altera ad apicem extendit, cellulis discoidalibus distinctis. *Alæ* posticæ nervis distinctis. *Pedes* sat graciles, postici formæ ordinariæ. *Abdomen* ♂ capite cum thorace duplo longius, segmento 1mo pedunculiformi, gracili, cylindrico, dimidii abdominis longitudine, segmentis reliquis 5 clavam elongato-ovatam formantibus, basalibus majoribus; ♀ (fig. 4c) capite cum thorace fere quadruplo longius, gracile, curvatum, in medio subinflatum et ad apicem valde acuminatum, (oviductu occulto,) 7-annulatum, segmento 2do latiori.

Genus *Brasiliense*.Sp. 1. *Monomachus Klugii*, (Plate XIV. fig. 4).

Ferrugineus, abdomine piceo nigro, pedunculo ferrugineo, alis pallidè tinctis, cum maculâ fuscâ terminali, genis valdè dilatatis, antennis fuscis pedibusque rufescentibus ♀.

Long. corp. lin. $10\frac{1}{2}$, expans. alar. lin. 10.

Mon. lanceolatus, Klug, MSS.

Habitat in Brasilia.

In Mus. Reg. Berolinensi.

Sp. 2. *Monomachus lateralis*, Klug, MSS. (Pl. XIV. fig. 3.)

Niger, tenue punctatus, abdomine subpiloso, mandibulis luteo-fuscescentibus, pedibus 4 anticis (cum coxis pallidè albidis) luteo-fuscis; femoribus in medio obscurioribus; pedibus 2 posticis cum coxis nigro-fuscis; abdomine luteo-marginato; alis hyalinis immaculatis ♂.

Long. corp. lin. $5\frac{1}{2}$, expans. alar. lin. $8\frac{1}{2}$.

Habitat in Brasilia. Sello.

In Mus. Reg. Berol.

Sp. 3. *Monomachus segmentator*.

Obscurè flavescens; capitis vertice fusco variegato, collare maculâ sublunatâ fuscâ; mesothorace fusco, metathorace nigro, punctato, pedunculo supra nigro, infra flavido, segmentis reliquis abdominalibus piceis, marginibus maculâque cuneatâ ad basin segmenti 3tii utrinque flavidis; abdomine setis tribus minutis terminato; capite thoraceque subtus articulisque basalibus pedum obscure flavidis, pedibus posticis fuscis; antennis corpore longioribus, filiformibus, articulo 1mo crasso, 2ndo minuto, reliquis longitudine æqualibus. ♂. (Fig. 5 a, ala, 5 b, antenna, ♂.)

Long. corp. lin. 6, expans. alar. lin. 6.

Habitat ——?

In Mus. Britt.

Sp. 4. *Monomachus fuscator*.

“Brunnescenti-niger, pedibus et abdomine parum dilutioribus,
“hoc ad medium inflato, ad apicem acuminato; antennis
“unicoloribus, ad apicem perpauillum crassioribus; alis
“minime infuscatis, tibiis posticis parum incrassatis” ♀.

Long. corp. lin. $7\frac{1}{2}$.

Habitat in Brasilia.

Syn. *Pelecinus fuscator*, Perty, Delect. Animal. Art. Braz. No. 3.

Sp. 5. *Monomachus gladiator*, Klug, MSS. (spec. indescr.)

Habitat Bahia. Gomez.

In Mus. Reg. Berol.

Sp. 6. *Monomachus apicalis*, Klug, MSS. (spec. indescr.)

Habitat in Bahia Brasilæ, M. Von Winthem.

In Mus. Reg. Berol.

Sp. 7. *Monomachus falcator*, Klug. MSS. (spec. indescr.)

Habitat St. Joan del Rey. Sello.

Obs. C. Darwin, Esq., brought home a species of this genus, which has for some time past been in the hands of W. E. Shuckard, Esq., for description.

The three following genera are at once distinguished from the preceding by having the ovipositor long and exerted.

FÆNUS, Fabricius.

THIS genus is remarkable on account of several peculiarities which it exhibits. The strongly dentated mandibles, the minute tongue-like labrum, the antennæ composed of thirteen joints in the male and of fourteen in the female, the elongated prothorax forming a long neck, the singular posteriorly dilated parapsides of the mesothoracic scutum (giving the appearance in some species of a separate subsegment), the insertion of the abdomen close to the mesoscutellum, the clavate hind legs, and the curious arrangement of the veins of the wings (Pl. XV. fig. 2), are all exceedingly characteristic, and render this one of the most isolated genera. I have illustrated the majority of these characters with figures in the "Introduction to the Modern Classification of Insects," vol. ii. p. 134.

Latreille appears to have dissected a female, since he describes only the mandibles of that sex; and Mr. Curtis, who dissected *F. assectator*, figures these organs as of a different form in the two sexes. In all the specimens of *F. jaculator*, *australis*, and *unguiculatus*, which I have dissected, including males and females, they were alike in form, all having a very strong and acute basal tooth within, which appears wanting in the male of *assectator*.

The labium also in *F. jaculator* and *unguiculatus* was much longer than in Mr. Curtis's figure.

The inferior wings are destitute of cells, the veins being almost obsolete.

The following is a monograph of all the species of the genus

hitherto described, or which I have met with in various collections:—

Sp. 1. *Fœnus jaculator*.

Niger, mesothorace transversè striolato, abdomine medio rufo, oviductu longitudine corporis, vaginis apice albis, tibiis posticis basi maculâ albâ notatis.

Long. corp. cum terebra ♀ lin. 11—13, (10½ Dahlb.)

Habitat per totam Europam.

Syn. *Ichneumon jaculator*, Linn. Faun. Succ. p. 406, 1626; Fabricius, Ent. Syst. 2, p. 177; *Fœnus jaculator*, Fabr. Ent. Syst. Suppl. 240; Syst. Piez. p. 141; Nees ab Esenb. Hym. Mon. 1, 307; Dahlbom, Exerc. Hym. pars 6, p. 76; Westwood, Introd. Mod. Syst. 2, p. 134, fig. 74, 8—16; Zetterstedt, Ins. Lapp. p. 408.

Obs. Fabricius tibiae posticas “basi apiceque albis” describit, et Neesius et Curtisius easdem partes nigras basi albas (annulo albo, Curt.), tarsis fuscis, posticorum Imo articulo albo, sed de diversitate sexuum in colore harum partium tacent. Dahlbomius tibiae et tarsos pedum posticorum in utroque sexu annulis basalibus albis describit, et Zetterstedtius “tibiae posticas basi sæpe etiam articulum primum tarsorum annulo albo instructo.” Specimina plurima utriusque sexus ipse cepi, omnia inter se (secundum sexum) congruentia, in quibus tibiæ posticæ omnium maculam albam in facie interna tibiæ posticarum (nec vero annulum) exhibent, articuloque basali tarsorum posticorum in fœminis (basi excepto) albo, in maribus vero tarsis omnino nigris. Differt fœmina abdominis colore rufo obsoleto; talem descripsit Geoffroi (Hist. Ins. Paris, 2, p. 328, *Ichneumon*, No. 16).

Sp. 2. *Fœnus assectator*.

Niger, mesothoracis tergo subtilissime varioloso, abdomine latere rufo maculato, tibiis posticis interdum basi albidis; mandibulis nigris, apice rufis; oviductu tibiæ posticarum longitudine vaginis nigris.

Long. corp. ♀ circiter lin. 5—7, lin. (3½—4½, Dahlb.)

Habitat per totam Europam.

Syn. *Ichneumon assectator*, Linn. Faun. Succ. p. 407; *Fœnus affectator*, Fab. Ent. Syst. Suppl. p. 240; Esenb. Hym. Monogr. 1, p. 308; *Fœnus assectator*, Curtis, Brit. Ent. pl. 123 ♀; Dahlb. Exerc. Hym. p. 77.

Sp. 3. *Fœnus Esenbeckii*, Westw.

Piceo-rufus, mesothoracis tergo evidentius rugosulo; antennis rufis, articulo 3tio fusco; mandibulis rufis, apice nigris; alis lutescenti-hyalinis, areolâ minutâ discoidali subconicâ; oviductu abdomine quadruplo breviori ♀.

Long. corp. (absque oviduct.) lin. 4, oviduct. $\frac{3}{4}$.

Habitat in Germania, prope Sickershausen.

Syn. *Fœnus affectator*, var. β N. ab Esenb. Hym. Monogr. 1, p. 309.

Certe à *F. assectatore* species distincta, coloribus sculptura et forma areolæ discoidalis diversa; caput rufum, vertice piceo, antice albo-sericanti, maculâ piceâ subtus insertionem antennarum; mandibulæ rufæ, apice nigræ; antennæ rufæ, articulo tertio et apicali fuscis; collum nigrum, mesothoracis tergum evidentius rugosulum, nigro-piceum; pectus nigrum, laterâ thoracis et metathoracis rufâ; abdomen fuscum, segmentis intermediis apice fulvis; oviductus abdomine quadruplo brevior, vaginis nigris; coxæ nigræ; pedes rufi, femoribus 4 anticis medio piceis; alæ flavido-tinctæ, areolâ minutâ discoidali versus apicem evidenter angustiori (in *F. assectatore* fere parallela).

Sp. 4. *Fœnus erythrostomus*, Dahlbom.

Niger, sericeo-micans, tergo mesothoracis subtilissime coriaceo; mandibulis totis abdominisque medio ferrugineis, tibiis posticis albo-annulatis, oviductu fere abdominis longitudine, vaginis apice albis ♀.

Long. corp. lin. $4\frac{1}{2}$.

Habitat in West Gothia, Smolandia, et Ost Gothia, Dahlbom.

F. assectatori robustior, fere ut *jaculator*. Corpus nigrum, sericeo-micans, mandibulis totis ferrugineis vix summo apice nigricantibus; mesothorax tergo subtilissime coriaceus; abdominis segmenta 2dum et 3um tota, 4-tumque maculâ laterali ferrugineâ; oviductus $2\frac{1}{4}$ lin. et abdomen $2\frac{3}{4}$ lin. longitudine, terebra rufo-testacea, vaginis nigris, apice albis. Pictura pedum *F. assectatoris*.

Syn. *Fœnus erythrostomus*, Dahlbom, Exercitationes Entomologicæ, Pars vi. p. 78.

Obs. Individua nonnulla olim vidi in Musæo D. Ingpen, mense Julio, prope "Highgate" capta, oviductum fere quartam partem unciæ longitudine habentia. An hæc species?

Sp. 5. *Fœnus hastator*, Fabricius.

Rufus, antennis (articulo 1mo excepto) nigris, abdomine rufo, basi fasciâque fuscis; oviductu brevi nigro, pedibus rufis, tibiis posticis incrassatis atris.

Statura omnino *F. assectator*.

Habitat in Barbaria.

Nunc in Mus. Hafniæ.

Syn. *Fœnus hastator*, Fabr., Syst. Piez. p. 142.

Teste Cl. Erichsonii (qui notas plurimas collectionis Fabricianæ collegit mecumque illas benevole communicavit), descriptio Fabriciana abdominis vitiosa, coloris flavi nullis vestigiis apparentibus.

Sp. 6. *Fœnus Capensis*, Serville.

Species mihi ignota, a Guérino in "Iconographie du Règne Animal," Insectes, pl. 65, fig. 4, delineata. Descriptio ejus nondum edita.

Sp. 7. *Fœnus irritator*.

Hæc species, Americæ Septentrionalis incola, mihi etiam ignota, a Cl. Harrisio in Catalogo Insectorum Massachusettensium nomine tantum indicata.

Sp. 8. *Fœnus Guildingii*, Westw.

Gracilis, niger, thoracis et abdominis lateribus rufescentibus; oviductu fere corporis longitudine, vaginis et terebra apice albidis, tibiis et tarsis 4 anticis albis ♂ ♀.

Long. corp. (absque oviduct. ♀) lin. $5\frac{1}{2}$, oviduct. lin. 5, expans. alar. lin. 5.

Habitat in Insula St. Vincentii, D. Guilding.

In Mus. Dom. Hope.

Species valde elongata et attenuata; caput nigrum, albo-sericans; antennæ nigrae, apice piceae aut rufae; collum elongatum nigrum, lateribus sericantibus; pectus et latera meso- et meta-thoracis rufa, tergum nigrum punctatum; abdomen valde elongatum, piceo-nigrum, segmentis intermediis lateribus lutescenti-rufis; oviductus longitudine abdominis et thoracis piceus, apice albido; coxæ 4 anticae rufae, posticae 2 nigrae; trochanteres et femora nigra; tibiae et tarsi 4 antici albi, illis lineâ tenui internâ nigricanti et horum apice fusco; tibiae posticae nigrae, basi interne maculâ albâ; tarsi postici nigri, articulo basali in ♀ annulo albo; areola minuta discoidalis apice angustior, in ♀ triangularis.

Sp. 9. *Fœnus gracillimus*, Westw.

Tenuissimus, capite lævi, collo valde elongato, thoracis dorso punctato, antennarum articulo basali subtus, ore, pedibus 2 anticis, coxisque intermediis fulvis; tibiis tarsisque 4 anticis albido-lineatis; pedibus posticis omnino nigricantibus; segmentis abdominalibus ad apicem fulvis.

Long. corp. lin. 6, expans. alar. lin. 6.

Habitat in Demerara.

In Mus. Brit. D. Latham.

Sp. 10. *Fœnus dorsalis*, Westw.

Ferrugineus, capite supra, medio mesonoti scutelloque nigris; abdomine piceo, segmentis apice rufescentibus; pedibus piceo-rufis, femoribus tibiisque 4 anticis in medio obscurioribus ♀.

Long. corp. lin. 5, expans. alar. lin. 4½.

Habitat in Hispania. D. Latreille.

In Mus. Britann.

Ferrugineo-rufus, capitis vertice obscuro, facie sericeâ; antennæ piceæ; scutellum et medium mesonoti nigra; metathorax ferrugineus; abdomen longum, piceo-nigrum, segmentis apice rufescentibus; pedes piceo-rufi, femora 4 antica in medio tibiæque anticæ picea; oviductus segmento ultimo abdominis haud longior; alæ parum fusco-tinctæ.

Sp. 11. *Fœnus terminalis*, Westw.

Niger, thorace lævi opaco, lateribus rufo-piceis; tibiis 4 anticis albis, lineâ internâ nigrâ, posticis nigris clavatis, annulo basali albo; tarsis albis, apice fuscis; oviductu longitudine corporis, vaginis apice late albis ♂.

Long. corp. lin. (oviductu excluso) 9¾, expans. alar. lin. 10½.

Habitat in Nova Hollandia et Terra Van Diemenii.

In Mus. Dom. Hope et Newman.

Species gracilis; caput nigrum opacum, antice et postice albo-sericans; antennæ nigrae; mesothoracis tergum læve opacum; latera thoracis versus tergum et tegulæ ferruginea; pectus nigrum aut piceum, albo-sericans; abdomen valde elongatum gracile, sensim incrassatum; oviductus longitudine abdominis et thoracis; terebra ferruginea, vaginis nigris apice latè albis; coxæ 4 anticæ rufæ aut piceæ, femoribus rufis aut piceis, tibiis tarsisque albis, illis lineâ tenui internâ nigrâ, horum apice fusco; femora 2 postica nigra; tibiæ clavatæ nigrae, basi annulo albo; tarsi albi, basi et extremo apice nigris; alæ hyalinæ, stigmate nigro, areolâ discoidali parvâ apicem versus paullo

latiori. Variat capite antice, lateribus mesonoti, femoribus et parte infera abdominis rufo-piceis.

Sp. 12. *Fœnus australis*, Westw.

Piceo-niger punctatissimus, thorace varioloso, capite antice, thoracis abdominisque lateribus corporeque toto subtus picco-ferrugineis; antennis nigris, pedibus picco-ferrugineis, femoribus supra lineâ nigrâ notatis ♂.

Long. corp. lin. $7\frac{1}{4}$, exp. alar. lin. 9.

Habitat in Nova Hollandia.

In Mus. Westwood.

Syn. *Fœnus australis*, Westw., in Proc. Zool. Soc. April 14, 1835.

Mandibulæ elongatæ, similiter dentatæ (fig. 1 z), dente valido interno basali, dentibusque tribus parvis ante apicem positis; alæ vix coloratæ, apicibus nonnihil infuscatis; tarsi postici compressi, ad basin lati.

Sp. 13. *Fœnus unguiculatus*, Westw. (Pl. XV. fig. 1.)

Niger, rufo-piceo varius, areolâ minutâ discoidali obliterated, unguibus tarsorum maximis (in pedibus posticis dimidium tarsorum longitudine æquantibus) ♂.

Long. corp. lin. $5\frac{1}{2}$, expans. alar. lin. 8.

Habitat in Nova Hollandia?

In Mus. Dom. Hope.

F. australi affinis. Caput nigrum, subtilissime coriaceum, facie albo-sericanti; mandibulæ piceæ, dente magno truncato ante apicem alteroque magno acuto nigricanti versus basin, interne armatæ (fig. 1 a); antennæ picco-nigræ, articulo 1mo basi et apice ferrugineo; mesothoracis tergum antice et ad latera et scutellum in medio nigra; latera thoracis picco-rufa; abdomen brevius, sensim clavatum, piceum, basi nigrum, segmentorum marginibus magis rufescentibus; pedes picco-rufi, coxis femoribusque supra obscurioribus, tibiis posticis parum clavatis, calcaribus elongatis; tarsi postici breviores compressi; ungues tarsorum quam in reliquis speciebus multo longiores, presertim in pedibus posticis, in quibus dimidium tarsorum longitudine fere æquant; alæ hyalinæ, areola parva discoidali obliterated, scil. areola 1ma submarginali cum illa effusa.

Sp. 14. *Fœnus Darwinii*, Westw.

Piceo-niger, rufo-variis, pedibus rufo-fulvis, areolâ discoidali magnâ ♂.

Long. corp. lin. 3, expans. alar. lin. $1\frac{3}{4}$.

Habitat in Nova Hollandia. Dom. Darwin.

Parvus, forma fere *F. unguiculati*.

Caput piceum, punctatum, margine oculorum et clypei mandibulisque rufescentibus, his apice nigris; antennæ piceæ, subtus pallidiores, articulo 1mo magis rufescenti; thorax brevis, rufus; tergum punctatum, maculâ magnâ anticâ, alterisque duabus lateralibus scutelloque in medio nigris; abdomen rufo-piceum, segmentis apice nigricantibus; pedes piceo-rufi, tarsi gracilibus obscurioribus, tarsis posticis articulis externe ad apicem acute productis; alæ hyalinæ, stigmatibus nigro, areolâ discoidali quam in congeneribus multo majori conicâ.

Sp. 15. *Fœnus rufus*, Westw.

Totus rufus, alis hyalinis ♂.

Long. corp. lin. $5\frac{1}{2}$, expans. alar. lin. $6\frac{3}{4}$.

Habitat in Australia occidentali. D. Gould.

In Mus. Hope.

F. australi etiam affinis. Totus rufus; caput et thorax punctata, spatio parvo antico mesothoracis transverse striolato; mandibulæ apice extremo piceæ; alæ hyalinæ, stigmatibus in medio lutescenti, areolâ discoidali magnitudine medioeri; thorax lateribus parum sericantibus.

Sp. 16. *Fœnus Senegalensis*, Blanch. Hist. Nat. Ins. vol. iv. p. 300.

Habitat in Senegallia.

In Mus. Reg. Paris.

Sp. 17. *Fœnus Brasiliensis*, Blanch. Hist. Nat. Ins. vol. iv. p. 300.

Habitat in Brasilia.

In Mus. Reg. Paris.

AULACUS, Jurine.

This genus, founded by Jurine, differs from *Fœnus*, in having the veins of the wings disposed in the ordinary manner, and in the slender hind legs and shorter abdomen, in which respects it assumes much of the ordinary appearance of some of the *Ichneumonidæ*. Like *Fœnus* it has the ovipositor long, and formed as in that genus, and the antennæ are composed of thirteen joints in the males (Pl. XIV. fig. 8a) and of fourteen in the females (fig. 8b). No figures of the *Trophi* having hitherto been published, I have added the details of the mouth of *A. Patrati*, taken from a male specimen; but as that was the sex dissected by Latreille* (vide

* In the details of the mouth of this genus, as well as of *Fœnus*, Esenbeck has relied upon Latreille's description, copying it almost verbatim without acknowledgment.

Gen. Crust. 4, 385), and as Jurine's figure of the mandible of *A. striatus* (taken from his unique female) differs in the toothing from my dissections and Latreille's description, I considered it probable that the difference might be sexual; having, however, also dissected a female of *A. ater* I find that its mandibles (fig. 9a) are short, with a rather broad obtuse apical tooth, and three others smaller and more obtuse within. In the males of *A. Patrati* they are, as described by Latreille, "corneæ breves crassiusculæ, latero interno tridentato, dente apicali acutiore, paullo longiore, inferis duobus obtusis" (fig. 8d); in one mandible however the apical tooth was furnished with a slight acute process within, like the rudiment of another tooth (fig. 8e). The labrum (Pl. XIV. fig. 8c), overlooked by Latreille and Esenbeck, is very minute and membranaceous, subtriangular, with the angles rounded and the sides rather emarginate. The maxillary palpi are 6-jointed (fig. 8f), and the labial ones 4-jointed (fig. 8g). The abdomen is implanted on the tergum of the metathorax, at a much greater distance from the scutellum than in *Fenus*. The fore wings have one large marginal cell and three submarginal ones; the first of which generally receives the first recurrent vein, although in some species this vein extends to the place of union of the first transverso-cubital vein with the cubital one, so as in fact to become continuous with the first transverso-cubital. In *A. compressus* the first recurrent vein is inserted in the second submarginal cell. The first transverso-cubital vein is very oblique, the second is generally obliterated in the middle so as to give the appearance of the second submarginal cell being outwardly incomplete, this second submarginal cell receives the second recurrent vein, but at a short distance before its insertion the cubital vein itself is seen to be slightly angulated with a slight thickening at the angle, indicating, as it were, the obliteration of an intermediate transverso-cubital vein, which could extend to the upper extremity of the first of these transverse veins. The third submarginal cell extends to the extremity of the wing; the veins of the hind wing are almost obsolete. The legs are slender, the hind ones not incrassated, as in *Stephanus* and *Fenus*; the ungues of the tarsi are acute at the tip, with two teeth within (fig. 7c).

On reviewing the characters of this genus we find them agreeing with none of the *Ichneumoncs genuini*. With *Alysia*, however, they present a much nearer relationship, especially in the broad dentate mandibles (although the position of these organs at rest is quite different in the two genera), the labrum, maxillæ, labium, and palpi. With the exception of the second recurrent vein being

obsolete in *Alysia*, the veins of the wings of the two genera are nearly identical. The number of joints of the antennæ, and the mode of insertion of the abdomen, thus become almost the only material characters to separate this genus from some of the *Ichneumon*es *adsciti*; indeed, Nees von Esenbeck introduces it into his family *Ichneumonides*, with the observation "locum inter *Sigalphum* et *Fænum* jure meritoque tenet, utrique affinis;"* but in *Sigalphus* the mandibles have the characters of those of the genuine *Ichneumon*s. The relationship of *Aulacus* to *Fænus*, on the other hand, is far more strong, especially in the two family characters mentioned above, namely, the number of joints of the antennæ and the insertion of the abdomen, as well as in the exerted ovipositor and number of joints of the palpi. No figure of the male of this genus having been hitherto figured, I have added a representation of that sex of *A. Erichsonii*.

The following is a description of all the species of the genus with which I am acquainted:—

Sp. 1. *Aulacus striatus*, Jurine.

Niger, pedibus totis abdomineque rufis, coxis posticis petioloque nigris, capite lævi, antennis nigris, thoracis dorso transversim sulcato, alis hyalinis immaculatis, nervis et stigmatibus fuscis ♀.

Long. corp. lin. $3\frac{3}{4}$ (in fig. Jurin.).

Habitat in Helvetiæ Montosis, Jur., etiam in Lapponia, prope Caput Boreale, Esenbeck.

Syn. *Aulacus striatus*, Jur. Hym. p. 90, pl. 7, G. 3; Esenbeck, Insecta Lapponica, p. 407; nec Latr. Gen. Cr. et Ins. iv. p. 336.

In Mus. Berol. vidi.

Variat, secundum D. Servilleum, ore margineque antico et postico oculorum testaceis.

Sp. 2. *Aulacus gloriator*.

Ater, abdomine medio pedibusque rufis, coxis trochanteribusque nigris, tibiis 2 posticis fuscis, tarsis flavidis, alis maculâ stigmatali apiceque fuscis.

Long. corp. lin. $5\frac{1}{2}$.

Habitat prope Viennam, N. ab Esenb. Gartz. Pomerania, Mus. Berol.

In Mus. Univers. Bonnæ et Reg. Berol.

* Insecta Lapponica, p. 408.

Syn. *Bassus gloriator*, Fab. Syst. Piez. p. 99 (teste Erichson, MSS. in Mus. Berol).

Aulacus flagellatus, Dahl. N. ab Esenb. Hym. Mon. 1, 305.

In individuo Neesiano petiolus abdominis manifeste brevior est quam in *A. Patrati*, et alæ flavido (præsertim ad costam) tinctæ, striolæ etiam mesothoracis dorsi minus profundæ et numerosiores.

Sp. 3. *Aulacus Patrati*, Serville.

Niger, abdomine medio pedibusque rufis, femoribus omnibus tibiisque posticis (basi et apice exceptis) nigro-fuscis, geniculis rufis, antennis nigris; capite lævi; alis hyalinis, stigmatæ et maculâ a stigmatæ descendenti fasciam abbreviatam constituyente, fuscis, thorace reticulato rugoso.

Long. corp. ♀ (absque terebra) lin. 5 (Serville), lin. 5½ (Esenbeck), lin. 4½ (indiv. nostr.); 4¾ ♂.

Habitat in Europa Media.

Syn. *Aulacus Patrati*, Serville, in Ann. Soc. Ent. de France, 1833, p. 412, tab. 15, fig. c; Esenb. Hym. Monogr. Suppl. vol. i. p. 320.

Aulacus Latreillacanus, Nees ab Esenb., Hym. Ichm. Affin. Monogr. vol. i. p. 304, 1834.

Aulacus striatus, Latr., Gen. Cr. et Ins. iv. p. 386; Serville and St. Farg., Encycl. Méth. x. p. 31, cum præcedenti confusus.

Aulacus sagittator, Pallas, MSS. in Mus. Berol.

“In pinetis Vasconicæ,” Latreille. “Environs de Tours,” Serville. “Prope Sickershausen,” Nees ab Esenbeck.

♀ in Mus. Westwood. D. Klug communic.

Obs. In individuis Neesiano et Servilliano, vena prima recurrens in aream lam submarginalem ascendit spatio brevi ante initium areæ 2dæ submarginalis. In individuis Latreilleo descriptis, ut et in nostris utriusque sexus, vena prima recurrens ad angulum lateris inferi et secundæ areæ submarginalis initium ascendit. Confer etiam observationes sub *Aulacum compressum*.

Sp. 4. *Aulacus obscuripennis*, Westw., ♀.

Niger, capite lævissimo, thorace antice irregulariter transverse striato, postice rugoso, abdomine medio rufo; alis hyalinis,

nubilâ parvâ mediâ, fasciâ substigmaticali apiceque tenui fuscis.

Long. corp. lin. $5\frac{3}{4}$ (absque terebra), expans. alar. lin. $9\frac{1}{2}$.

Habitat in Polonia (Waga).

In Mus. Reg. Berol.

Præcedentibus major.

Coxæ et femora nigra, geniculis rufis; tibiæ et tarsi 4 antici rufi, tibiæ posticæ nigræ, basi et apice rufæ; tarsi rufi. An *Aulaco Patrati* vere distinctus?

Sp. 5. *Aulacus Erichsonii*, Westw. (Pl. XIV. fig. 6.)

Gracilis, niger, antennarum articulo 1mo subtus fulvo, abdominis dimidio basali (petiolo nigro) rufo, fasciâ tenui transversâ nigrâ, apice nigro; coxis nigris, pedibus 4 anticis flavido-rufescentibus, femoribus 2 posticis fuscis, tibiis obscuris, apice rufescentibus, tarsis omnibus albidis, alis nubilâ substigmaticali apiceque parum fuscis ♂.

Long. corp. lin. $5\frac{1}{2}$, expans. alar. lin. 9.

Habitat prope Berolinum, D. Erichson.

In Mus. Reg. Berol.

Sp. 6. *Aulacus compressus*, Spinola.

Niger, abdomine medio rufo, alis immaculatis, stigmate venisque nigris, mandibulis 3-dentatis, pedibus nigris, tibiis tarsisque anticis piceis ♂.

Long. corp. lin. 8.

Habitat in Montibus Orerii (Liguria) Spinola.

Specimen unicum a Spinola capta. Latreillius autem dicit "*Aulacum compressum* forsans præcedentis [*Aul. striati* seu *Aul. Patrati*, Serv., *Aul. Latrilleuni*, Esenb.] varietatem a Dom. Spinola accepi. Alæ *Aulaci compressi* simili modo reticulatæ," ut in individuis suis *Aul. Patrati* (*striati*, Latr.). De hac re Neesius inquit, "nostrum non est has lites dirimere, cum *Aul. compressum*, Spin., videre non contigerit, forsans duarum hic commiscentur specierum individua, sed quoniam vir acutissimus *Aulaco compresso* disertis verbis tribuit nervas recurrentes duos mediam areolam cubitalem petentes et alas immaculatas esse perhibet donec res accuratius illustretur speciei propriæ esse hunc *Aulacum* a cl. Spinola inventa non dubitamus." Contra sententiam Latreillii magnitudo insecti, color pedum et alæ immaculatæ insuper speciem distinctam indicant.

Sp. 7. *Aulacus thoracicus*, Klug, MSS.

Niger, collari et mesothoracis dorso sanguineo, striato, alis costâ areolâ marginali et 1mâ submarginali fuscis ♂ ♀.

Long. corp. lin. 5, expans. alar. lin. 9.

Habitat apud Promont. Bonæ Spei, Krebs.

In Mus. Reg. Berol. et nostr.

Oviductus ♀ brevior; scutellum ♂ nigrum, ♀ rufum; tarsi 2 postici ♀ articulo basali albo.

Sp. 8. *Aulacus Stephanoides*, Westw.

Niger, capite et antennarum articulo basali luteis, abdomine elongato gracili, oviductu abdomine duplo longiori, terebra rufa, vaginis nigris apice albis, alis apice parum fuscis ♀.

Long. corp. lin. 7, oviduct. lin. 11, expans. alar. lin. 11.

Habitat in Brasilia, Virmond.

In Mus. Reg. Berol.

Alæ hyalinæ, stigmatè nigro, venâ 2dâ transverso-cubitali perfectâ et fere rectâ; mesothorax antice bilobatus.

Sp. 9. *Aulacus hyalinipennis*, Westw.

Niger, facie et articulo 1mo antennarum fulvis, alis hyalinis, stigmatè nigro apice fusco, pedibus 4 anticis fulvis, femoribus posticis fuscis, tibiis rufescentibus, tarsis fulvis ♂.

Long. corp. lin. 5, expans. alar. lin. 6.

Habitat Mexico.

In Mus. Reg. Berol.

Species gracillima; caput parvum, facie et partibus infera et postica fulvis; antennæ nigræ, articulo basali fulvo; collum elongatum nigrum, subtus fulvum; thorax et abdomen nigra, hoc compresso; alæ valde hyalinæ, apice fusco, stigmatè nigro; pedes postici coxis et femoribus fuscis, geniculis fulvis, tibiis rufescentibus, tarsis fulvis, apice fuscis; palpi fuscii.

Sp. 10. *Aulacus ater*, Westw.

Totus ater, alis pallidè fusciscentibus, areolâ externo-mediâ plagâ parvâ posticâ, alterâque minutâ cum stigmatè connexâ fuscis ♀.

Long. corp. lin. 7, expans. alar. lin. 11½.

Habitat in Nova Scotia.

In Mus. Reg. Berol. et nostr.

Syn. *Aulacus niger*, Shuckard, in Entomologist, p. 124.

Caput et thorax pubescentia grisea parum induta; oviductus corpore fere longitudine æqualis; terebra picea; mesothorax transverse striatus; alæ fusciscenti hyalinæ, apice parum obscuriores, stigmatè nigro; striga minuta in parte postica areolæ externo-mediæ et macula parva sub stigma apicem areolæ 1mæ submarginalis occupante.

A variety of this species, with a red fascia across the middle of the abdomen, is figured amongst Abbott's drawings in the British Museum, vol. xii. fig. 18.

Sp. 11. *Aulacus? fasciatus*, Say.

Alis violaceis, fasciâ mediâ hyalinâ.

Long. corp. lin. 6.

Habitat ad Ohium fluvium, Amer. Septentr.

Syn. *Aulacus fasciatus*, Say., Contrib. of the Maclurian Lyceum, 1, p. 69, Jan. 1829; Serville, Ann. Soc. Ent. France, 1833, p. 412; Nees ab Esenb. Hym. Mon. 1, p. 320.

Sp. 12. *Aulacus Abbottii*, Westw.

Niger, abdomine versus basin rufo; pedibus rufis, alis strigâ parvâ versus basin maculâque pone stigmata fuscis ♀.

Long. corp. lin. 7, oviduct. lin. 8, expans. alar. lin. 11.

Habitat in Georgia Americæ.

In Mus. Britann.

Caput tenuissimè punctatum, pubescentia grisea parum indutum; palpi et antennæ nigri; mesothorax transverse striatus, striis anticis magis distantibus; abdomen nigrum, segmenti 1mæ apice et 2do (apice excepto) rufis; terebra rufa, vaginis nigris apice piceis; pedes rufi, coxis nigris, trochanteribus posticis fuscis, alis pallidè flavido-hyalinis, striga tenui versus basin apiceque areolæ 1mæ submarginalis fusco, stigmatè nigro.

Sp. 13. *Aulacus rufus*, Westw.

Rufus, antennis (basi excepto) et abdominis basi nigris, alarum apice fusco.

Long. corp. lin. 8, expans. alar. lin. 14.

Habitat in Terra Van Diemenii.

In Mus. Hope.

Caput nitidum; mandibulæ apice nigræ; antennæ nigræ, articulis duobus basalibus rufis, 3tio piceo; thorax transverse striatus,

lobis lateralibus et anticis valde distinctis; petiolus abdominis elongatus, niger, nitidus; terebra rufa, vaginis nigris; alæ hyalinæ, apice fusco-tinctæ, stigmatate nigro, areolâ costali, apice fusco.

Sp. 14. *Aulacus cingulatus*, Westw.

Rufus, antennis piceis, articulo 7mo albo ♀.

Long. corp. lin. $5\frac{3}{4}$, expans. alar. lin. 11.

Habitat apud Fluvium Cygnorum, Nov. Holl.

In Mus. Hope.

Caput rufum, læve; mandibulæ apice nigræ; antennæ picæ, articulis basalibus rufis, 7mo albo, reliquis magis nigricantibus; thorax rufus transverse striatus, tegulis albidis, lobis anticis mesonoti valde elevatis; abdomen ovatum petioli brevi, rufum nitidum, basi supra nigrum; pedes rufi, tibiis 2 posticis in medio piceis; oviductus abdomine fere triplo longior; terebra rufa, vaginis nigris; alæ valde hyalinæ, iridescentes, stigmatate et venis nigris, nubilâque minutâ apicali fuscâ.

Sp. 15. *Aulacus lateritius*.

Lateritius: abdominis et alarum basi, antennarum apice nigris articulisque 7 et 8 flavo-albidis, alisque ad apicem maculâ parvâ fuscâ, tibiis tarsisque posticis extus fuscis.

Syn. *A. lateritius*, Shuckard, in Entomologist, p. 125.

Long. corp. lin. $8\frac{1}{2}$, expans. alar. lin. 16.

Habitat in Nova Hollandia.

Sp. 16. *Aulacus congener*, Westw.

Rufus, abdomine nigro, antennis, tibiis, tarsisque obscure picco-rufis; alis pallidis, fere dimidio basali, areâ anali nubilâque apicali fuscis, costâ crassâ, stigmatateque angustiori nigris ♂.

Habitat — ?

Long. corp. lin. 9, expans. alar. lin. $12\frac{1}{2}$.

In Mus. Britann.

Sp. 17. *Aulacus apicalis*, Westw. (Pl. XIV. fig. 7.)

Rufus, capite abdomineque nigris, hoc lunulâ versus basin flavescenti, alarum apice lato nigro ♀.

Long. corp. lin. 5, expans. alar. lin. $10\frac{1}{2}$.

Habitat in Nova Hollandia.

In Mus. Dom. Hope and Shuckard.

Syn. *Aulacus variegatus*, Shuckard, in Entomologist, p. 125.

Species insignis, brevis; caput nigrum, nitidum; antennæ breves, crassiores, nigrae, articulis duobus basalibus rufis, 10—14 albis (dimidio apicali ultimi nigro excepto); thorax rufus, striatus, lobis anticis mesothoracis valde elevatis; pedes rufi, tarsorum articulo ultimo fusco; alæ hyalinæ stigmatè apiceque lato nigris; abdomen breve, ovatum, petiolo brevi, nigrum, nitidum, lunulâ versus basin flavescenti; oviductus abdomine vix dimidio longior, fere crecta (fig. 7a); terebra rufa, vaginis nigris. Fig. 7b, caput et prothorax, ex latere visa; 7b, ungues.

Sp. 18. *Aulacus signatus*.

“Niger, scapo antennarum pedibusque 4 anticis rufo-testaceis; alis hyalinis, maculâ ad stigma brunneâ.” Shuckard in Entomologist, p. 124.

Long. $5\frac{1}{2}$ lin., exp. alar. $9\frac{1}{2}$ lin.

Habitat Ceylon.

In Mus. Shk.

On comparing the characters of the preceding genera together we find that in effect they present but little uniformity, inter se, if we except the number of joints of the antennæ and the unusual place of insertion of the abdomen.

The upper lip of *Fœnus* and *Evania* is nearly alike, but those of *Pelecinius* and *Aulacus* materially differ from the preceding, as well as from each other; the mandibles offer a better character in their very strong, broad and dentate form, but those of *Pelecinius* resemble those of the majority of the *Ichneumonidæ*. The maxillary palpi, although generally 6-jointed and the labial 4-jointed, are respectively only 5- and 3-jointed in *Pelecinius*. The veining of the fore wings offers no uniformity, except in the presence in all of a distinct costal cell, by which they are separated from all the *Ichneumonidæ*, in which the cell is obliterated by the union of the postcostal vein with the costa. Moreover, in the hind wings the veins are almost obsolete in all the genera yet reviewed. The form of abdomen, the length of the ovipositor, and the form of the feet, afford no uniform characters; neither is the toothing of the ungues constant, being simple in *Fœnus* and *Pelecinius*.

There are, however, several other genera which are so closely allied to the preceding groups that I consider myself authorised in regarding them as equally belonging to the family.

MEGALYRA, Westw.

Corpus cylindricum, fere parallelum. *Caput* thoracis latitudine fere globosum (Pl. XV. fig. 3a, caput ♂, ex latere visum; fig. 3b, facies ♂; fig. 3e, caput et thorax ♀). *Ocelli* inter oculos positi; antennæ versus os (sub carinam semicircularem clypeum cingentem) insertæ. *Labrum* breve, triangulare, setosum. *Mandibulæ* breves, crassæ, corneæ, apice acutæ, dentibusque duobus internis æqualibus intus apicem armatæ. *Maxillæ* lobis duobis apicalibus margine membranaceo. *Palpi* maxillares 5-articulati; 1mo brevissimo, 2do et 3tio brevibus, obconicis; 4to et 5to longis, gracilibus. *Mentum* angustum, corneum, semitubulosum. *Labium* membranaceum, ovatum. *Palpi* labiales articulis 3us fere æqualibus (fig. 3f, maxilla et labium in situ). *Antennæ* gracillimæ, in utroque sexu 14-articulatæ. *Prothorax* minutus, in collum haud productum. *Mesothorax* margine antico truncato et ad marginem posticum capitis applicato. *Mesoseutum* fere quadratum. *Scutellum* magnum. *Metathorax* parte anticâ thoracis vix angustior, apice truncatus, lineâ mediâ in duas partes divisus. *Abdomen* subsessile (petiolo nullo) in apicem metathoracis insertum, oblongo-ovatum (fig. 3d ♂), fere thoracis latitudine. *Oviductus* longissimus (fig. 3g, apex abdominis ♀ infra; 3h, lateraliter visus; 3k, apex cerebræ lateraliter; 3l, supra visus). *Alæ* anticæ venâ postcostali e costa remotâ, stigmate inconspicuo, areolâ unâ marginali, duabus submarginalibus, venâ transversâ has separantibus indistinctâ (venis longitudinalibus in parte colorata multo crassioribus (fig. 3i); venâ unicâ obliquâ in alis posticis). *Pedes* longitudine mediocres, femoribus parum crassioribus, tibiis tarsisque simplicibus, illis apice ecalcaratis in pedibus 4 posticis; his articulo 4to subtus setoso (fig. 3m). *Ungues* simplices, pulvillus parvus.

In this genus we have a still greater departure from the assigned character of the family, the abdomen being implanted upon the thorax in the ordinary position. We find, however, the broad toothed mandibles, the 14-jointed antennæ, the distinct costal cell of the fore wings, and the indistinct veining of the hind wings, which we have seen to be the predominating characteristics of the family, whilst the number of the articulations of the palpi correspond with those of *Pellicinus*.

The only known species of this curious genus is an inhabitant of New Holland.*

* [P.S. Mr. Shuckard now possesses a second and larger species of the genus from the same country.]

Megalyra fasciipennis, Westw. (Pl. XV. fig. 3 ♂.)

Nigra, pedibus rufis, alis fasciatis, capite thoraceque punctatis. Long. corp. lin. 5—7½ (oviduct. exclus.), expans. alar. lin. 9—12½, long. oviduct. individ. majoribus lin. 28.

Habitat in Nova Hollandia.

In Mus. nostr. &c.

Syn. *Megalyra fasciipennis*, Westw., in Griffith An. Kingdom, pt. 33, p. 419, Insects, pl. 66, fig. 4 ♀, pl. 106, fig. 4a-f, details.

Antennæ nigrae, basi piceae, articulo 1mo crasso, 2do minuto reliquis gracillimis, 4to longiori; articulis 3—5 interdum piceo-rufis; caput et thorax confertissime punctata, griseo-pubescentia; abdomen in utroque sexu dorso 7-annulato, segmentis duobus basalibus margineque postico segmentorum sequentium in foemina nitidis, horum basi tenuissime et confertissime punctatissimis, lateribus griseo-pubescentibus; abdomen maris segmento 1mo nitido, punctis nonnullis sparsis, 2do et 3tio punctatissimis, spatio brevissimo medio transverso impunctato, 4to et 5to basi laevibus apice punctatissimis, 6to et 7mo parcius punctatis, hujus apice acuto; oviductus terebra rufo-picea, vaginis nigris; pedes rufi aut piceo-rufi; alae fusciscenti-hyalinae, fasciâ latâ fuscâ pone medium anticarum apiceque nubila fusciscenti, venis in parte colorata alarum nigris, reliquis piceo-rufis.

A figure of the female of this insect having been published in "Griffith's Animal Kingdom," the male is here represented; the female differing from that sex only in possessing an exceedingly long exerted ovipositor.

TRIGONALYS, Westw.

(Proceedings of Zool. Soc., April 14, 1835, No. 28, p. 53.)

Genus anomalum. Caput et antennæ *Lydxæ*, abdomen *Mutillæ*, alarum venæ fere ut in *Myrmosa* dispositæ. Caput magnum, subquadratum, planum, antice paullo latius. Clypeus margine antico emarginato. Labrum minimum, apice attenuatum, linguiforme, longe ciliatum, è membrana lata prodeuns (Pl. XV. fig. 4a). Mandibulæ (fig. 4b, 4c) magnæ, crassæ, apice acutissimæ, uno dentibus duobus, altero vero tribus magnis acutis internis. Maxillæ (fig. 4d) parvæ, lobo apicali membranaceo, rotundato, lobo interno minuto. Palpi maxillares 6-articulati, articulis longitudine inæqualibus; 1mo minuto, 3tio brevi crassiori. Mentum corneum, semitubulosum.

Labium (fig. 4e) parvum, membranaceum, lobis duobus obtusis lateralibus membranaceis. *Palpi* labiales 3-articulati; 1mo longiori, 2do brevi obconico, 3to multo majori, securiformi, setoso. *Antennæ* (fig. 4f) inter oculos in medio faciei insertæ, capite cum thorace longitudine fere æquales, 25-articulatæ; articulo 1mo crasso, 2do parvo, 3tio primi longitudine, reliquis longitudine sensim decreescentibus, apicalibus minutissimis et gracilibus. *Collum* breve. *Thorax* ovato-obconicus; mesothoracis tergo latiori, parapsidibus distinctis. *Abdomen* in parte infera apicali metathoracis insertum (fig. 4i), convexum, ovatum, antice et postice paullo attenuatum, apice deflexo, petiolo nullo, tergo 5-annulato; ventre etiam 5-annulato, ano etiam apparente. *Alæ* anticæ formæ et magnitudinis ordinariæ; anticæ longitudine thoracis et abdominis; vena postcostali e costa remota, stigma mediocre, cellula una marginali, 4 submarginalibus; Ima magna, apice acuminata, (vena prima recurrenti cum venâ 1mâ transverso-cubitali continuâ,) 2da parva, elongato-triangulari, 3tia parva quadrata venam secundam excipienti, 4ta apicem alæ attingente. *Alæ* posticæ venis distinctis. *Pedes* graciles, longitudine mediocres; trochanteres biarticulati (fig. 4g), in pedibus anticis longi. *Tibiæ* 4 posticæ apice bicalcaratæ. *Tarsi* graciles, unguibus apice bifidis (fig. 4h).

This extraordinary genus exhibits so many discordant characters that its real affinities must remain at present undetermined. Were the antennæ broken off it would at first sight be regarded as a male *Mutillæ*, of which it has completely the habit, whilst the veining of the fore wings is very similar to that of *Myrmosa*; in fact, in this character, both in the fore and hind wings, we have a complete fossorial insect, none of the *Pupivora* exhibiting so perfect a development of the veins of the wings, especially of the hind pair. The form of labrum exhibited by this insect is found also in *Vespa*, as well as in *Sapyga*, which last genus also strikingly agrees with *Trigonalys* in the form of the mandibles, and also nearly in the veins of both fore and hind wings. With such characters we might almost be justified in regarding the insect as belonging to the *Aculeata*, and as an anomalous form of the *Mutillidæ*, or *Sapygidæ*, more especially as we know that in the clavate antennæ of *Sapyga*, and the flabellate ones of *Psammotherma*, the antennæ of that family are liable to anomalous modifications of form, whilst many *Coleoptera* teach us that an increased

number in the joints of the antennæ is one of the most ordinary of the anomalies which those organs exhibit.

On more minutely examining the insect we find, however, that an equally strong relation with the *Pupivora* is possessed by it, founded upon other characters, in addition to that of the antennæ, which in their multi-articulate structure are represented by those of various *Tenthredinidæ*, and more especially by the *Ichneumonidæ*.

The structure of the trochanters, and the irregularity in the number of the joints of the palpi, (6 and 3 instead of 6 and 4,) joined to the number of segments in the abdomen, of which there are only 5 (instead of 6 or 7, as in the sexes of the aculeate *Hymenoptera*), are reasons which appear sufficient to warrant us in placing the genus amongst the aberrant *Hymenoptera*, amongst which we will now inquire its place.

The nonsessile abdomen at once removes the genus from the *Tenthredinidæ*, whilst the veining of the wings, the comparative fewness of the joints of the antennæ, and the 6-jointed maxillary palpi, remove it from the *Ichneumones genuini*. We must therefore refer it either to the adscitous *Ichneumonidæ* or to the *Evaniidæ*, which are the only other families to which it can be considered as allied. It is amongst the *Alysiides*, and especially in *Alysia*, that we find the most complete veining of the wings united with very strong and dentate mandibles, and 6-jointed maxillary palpi; but no adscitous *Ichneumon* possesses two recurrent veins, nor has the costal areolet distinct. Now these two characters, which with the broad toothed mandibles we have found to be so characteristic of the *Evaniidæ*, are found in this genus; moreover, in *Evania* we have the minute labrum, strong toothed mandibles, 6-jointed maxillary palpi, irregular shaped labial palpi, bifid ungues, and elongated anterior trochanters of *Trigonalys*. *Fœnus* also presents us with the minute labrum, strongly toothed mandibles, and 6-jointed palpi; whilst by minutely examining the direction of the cubital vein of *Aulacus* we find evidence of the obsolete existence of a transverse cubital vein, which, were it present, would render the fore wings of the two genera absolutely identical, although the hind wings are, it is true, very differently veined; nevertheless, if the veins be traced, they will be found nearly to correspond with those of the hind wing of *Trigonalys*.

We thus learn that the fewness of the joints of the antennæ, as well as the mode of insertion of the abdomen, are no longer characteristic of the group or family typified by *Evania*.

The genus is named in allusion to the triangular form of the

second submarginal cell, which is sometimes petiolated. The recurrent veins also vary somewhat in the place of their connection with the submarginal cells, sometimes being separate from, and sometimes inosculating with, the veins which separate these cells.

Sp. 1. *Trigonalys melanoleuca*, Westw. (Pl. XV. fig. 4.)

Nigra punctata, subpubescens, capite antice, et pone oculos maculisque duabus minutis verticis, metathoracis lunulis duabus segmentoque 1mo abdominis albis, alis pone medium fuscis.

Long. corp. lin. 4, expans. alar. lin. 7.

Habitat in America Meridionali. Bahía.

In Mus. Britann. et Westwood. Communic. Dom. Turner.

Caput et abdomen nitida, thorax obscurus, totum corpus griseo-pubescens; metathorax albus, in medio linea tenui nigra, postice subito dilatata; abdomen punctatum, segmento 1mo nitido, segmentis 2—5 lateribus albo-maculatis; pedes nigri, griseo-villosi, coxis, trochanteribus femoribusque albo-variis; alæ hyalinæ, dimidio apicali fusco, versus angulum analem pallidiori.

Sp. 2. *Trigonalys Servillei*, Westw.

Nigra, parte postica thoracis et abdominis basi pallidè luteis, alis immaculatis hyalinis.

An *Cælius Servillei*, Lepell. de St. Farg. Guér. Rev. Zool. 1842, p. 84? Magnitudo *Tr. melanoleucæ*.

In Mus. Dom. Serville, Parisiis. An varietas præcedentis?

Sp. 3. *Trigonalys obscura*, Westw.

Nigra obscura, capite plano nitido, abdomine segmento 1mo margine postico luteo, alis obscurè fuscis.

Long. corp. lin. 7, expans. alar. lin. 13.

Habitat in Surinamia. Cordua.

In Mus. Reg. Berol.

Syn. *Sphex depressa*, De Geer Mem. vol. 3, pl. 30, fig. 7, teste Dom. Erichson.

Antennæ et pedes nigri fusco-sericantes, tibiis tarsisque apice fuscis; abdomen fusco-pubescens, segmento 1mo ad apicem obscure luteo, subtus omnino luteo; alæ anticæ obscure fuscae, versus angulum analem magis hyalinæ, vena penultima transverso-cubitali intus ramum parvum, apice fuscatum, emittit.

Sp. 4. *Trigonalys Leprieurii*, (Seminota Lepr. Guér. Mag. Zool. 1840, pl. 41.)

Habitat Cayenne.

Sp. 5. *Trigonalys Hahnii*, Spinola.

Omnino nigra, alis anticis fasciâ obscurâ.

Magnitudo præcedentis, sed gracilior et pedibus longioribus.

Habitat in Germania, Gallia et Anglia.

In Mus. Dom. Serville, Guérin, Spinola, Shuckard.

Syn. *Trigonalys Hahnii*, Spinola, in Guér. Mag. Zool. Ins. 1840, pl. 50.

Trigonalys nigra, Westw., in hoc op. olim.

Trigonalys Anglieana, Shuckard, in Entomologist, p. 122.

Abastus Macquartii, Lepell. de St. Farg. ined.

Sp. 6. *Trigonalys pullata*.*

Syn. *Lycogaster pullatus*, Shuckard, in Entomologist, p. 124.

STEPHANUS, Jurine.

This is another anomalous genus whose true situation has equally perplexed systematists: Jurine, the founder of it, placing it with the *Evaniidæ* on account of its relation with *Fœnus*, "soit par la manière de tenir son abdomen presque verticalement, soit par le reuffement de ses jambes postérieures." Latreille, on the other hand, placed it with *Xorides*, at the head of the genuine *Ichneumons*, regarding it and *Aulacus* as the connecting links between them and the *Evaniidæ*, observing "*Stephani* antennis et abdominis insertione cum *Ichneumonidibus* omnino conveniunt, et ad tertium ordinem methodi Jurineanæ potius quam ad secundum [scil. *Evaniidæ*] cui inscribuntur, pertinent."—(Gen. Crust. 4, p. 4.) It is chiefly on account of the number of joints in the palpi described by Latreille, and all subsequent authors who have treated upon the genus, (namely, five in the maxillary, and four in the labial,) that this relationship with the genuine *Ichneumons* has been founded; but in *Stephanus Brasiliensis*, which I have very carefully examined, the maxillary palpi are unquestionably 6-jointed; which characters, as well as the recurrent vein, at once removes the genus from the genuine *Ichneumons*: indeed, Esenbeck, and Messrs. Serville and St. Fargeau, influenced by other con-

* I consider *Lycogaster pullatus*, Shuckard, to be the male of another species of *Trigonalys*.

siderations, removed *Stephanus* to the *Adsciti*, the latter authors observing "Le genre *Stephane* doit constituer à lui seul une subdivision dans les *Braconides* avec ce caractère, palpes maxillaires de 5 articles, les labiaux de quatre"—(Encycl. Méth. 10, p. 488); whilst Esenbeck regards *Stephanus* as the connecting link with *Alomya*, between the *Braconoidei* and the *Ichneumones genuini*.—(Hym. Monogr. 1, p. 6.) Lastly, Mr. Haliday, in his "Hymenopterorum Synopsis," has formed *Stephanus* into a family distinct from the great family *Ichneumonidae*, with the character "Prothoracis collum elongatum?" between *Agriotypus* and the *Evanidae* characterized "abdomen metathoracis dorso annexum."

In *S. Brasiliensis** the labrum, which does not appear to have been previously described, is small, transverse-quadrate, with the anterior angles rounded, and setose; the mandibles are nearly triangular, with a very slight tooth on the inside near the tip; the maxillary palpi are distinctly 6-jointed, and the labial 4-jointed; the antennæ have between thirty and forty joints; the tergum of the prothorax is strongly developed, and extends at the sides to the squamulæ; in front it is suddenly contracted and formed into a distinct neck transversely striated; the metathorax is as long as the mesothorax. The veining of the fore wings is almost identical with that of such of the *Alysiides* as have only two submarginal cells; the postcostal vein is not confluent with the costa; the hind wings offer only two distinct longitudinal veins. The remarkable structure of the tarsi has not been before noticed, these parts in the four fore legs are very slender and long, but much shorter and thicker in the hind legs, especially of the females. In all the feet, however, the fourth joint is produced into a long lobe beneath, having the fifth joint inserted quite at its base, so as to cause the fourth joint from above to appear scarcely distinct. The tarsal ungues are entire. The abdomen of the female is represented at Pl. XV. fig. 5.

On reviewing the characters of the genus, it appears to me that, notwithstanding the extended limits assigned to the family, *Stephanus* ought not to be considered as belonging to it, but must be placed amongst the *Ichneumones adsciti* near *Alysia*, (instead of *Bracon*, Esenbeck's insertion of it amongst the *Braconoidei* being founded on his erroneous character of the maxillary palpi,) from all which however it is absolutely isolated. In fact, the distinct costal cell, and the slight veining of the hind wings, seem to be

* The details of the mouth of this species are figured in the "Animal Kingdom," Insects, pl. 106, fig. 2a—2h.

the only characters amongst those which we have seen to be constant amongst the *Evaniidæ*, which would unite *Stephanus* with that family, although several of its other characters accord with those of *Pelecinus* and *Fœnus*.

Sp. 1. *Stephanus serrator*.

Brecon serrator, Fab., Ent. Syst. Suppl. 224; Syst. Piez. p. 108.

Stephanus coronatus, Jurine.

Habitat in Europa.

Sp. 2. *Stephanus coronator*.

Pimpla coronator, Fab., Syst. Piez. p. 118; Serville and St. Fargeau, Enc. Méth. 10, 489.

Habitat in Amboina (Fabricius); Java (Serville and St. Fargeau, in Enc. Méth.).

Sp. 3. *Stephanus frontalis*, Klug., MSS.

Species adhuc inedita, in Mus. Reg. Berolinensi conserv.

Habitat Caput Bonæ Spei.

Sp. 4. *Stephanus Brasiliensis*, Westw.

Westwood, in Griffith, An. Kingdom, Insects, pl. 66, fig. 3, ♂ pl. 106, fig. 2*a-h*, details.

Habitat in Brasilia.

Sp. 5. *Stephanus furcatus*, Serv. and St. Farg.

Serville and St. Fargeau, Enc. Méth. 10, 489; Guérin, Icon. R. An. Ins. pl. 65, fig. 5 ♀, and 5*a b*, details.

Habitat in Brasilia.

Sp. 6. *Stephanus acutus*, Serv. and St. Farg.

Serville and St. Fargeau, Enc. Méth. 10, 489.

Habitat in Brasilia.

Sp. 7. *Stephanus bicolor*, Westw.

Piceo-niger, capite thoraceque rufis rugosis, oviductu fasciâ latâ albâ ante apicem ♀.

Long. corp. (oviduct. exclus.) lin. $9\frac{1}{2}$, expans. alar. lin. 10.

Habitat in Georgia, Americæ.

In Mus. Soc. Linn. Lond. Dom. W. E. Hooker.

Caput ferrugineum punctatum, postice lineis transversis brevibus elevatis in medio notatum, hæ lineæ in verticem sunt magis curvatæ, fronte tuberculis nonnullis acutis, alteroque in medio faciei inter oculos et sub ocellum intermedium posito; antennæ et palpi picei; thorax ferrugineus, transversostriatus; metathorax obscurior et rude punctatus; abdomen piceum, petiolo longitudine mediocri; oviductus valvulæ nigræ, fasciâ latâ albâ ante apicem; pedes 4 antici picei, tarsis paullo pallidioribus, pedes postici valde robusti et breves, tarsis posticis brevissimis crassis et ferrugineis, articulo basali maximo; alæ fusco-luteo tinctæ, venis distinctis stigmatæque nigris.

This species is apparently figured amongst Abbot's drawings in the British Museum, vol. 12, fig. 19.

Sp. ? 8. *Stephanus diadema*.

Fœnus diadema, Fabricius, MSS., in Mus. Kiliæ.

I am unfortunately unable to determine whether this undescribed insect be specifically different from the last; the notes which I made at Kiel simply stating that the *Fœnus diadema* of the Fabrician Cabinet is a *Stephanus* with a red head.

Sp. 9. *Stephanus Indicus*, Westw.

Niger, gracillimus, antennarum basi rufo, tibiis tarsisque basi albidis, petiolo longissimo, venis discoidalibus obsoletis ♂.

Long. corp. lin. $6\frac{1}{2}$, expans. alar. lin. 7.

Habitat in India Orientali.

In Mus. nostr. &c.

Caput globosum, vertice piceo, tuberculis nonnullis conicis instructo; facies lineis tribus albidis notata, lineæque brevi albâ sub oculos; palpi maxillares et antennæ gracillimi fusci, basi rufo; collare valde elongatum; petiolus abdominis tenuissimus, fere longitudine capitis et thoracis conjunctim; femora 4 antica picea; tibiæ et tarsi pallidiores, basi albidis; pedes postici valde incrassati, nigri; alæ hyalinæ, venis discoidalibus obsoletis (venis postcostali, externo-mediana et anali, recurrenti-mediana et Ima recurrenti-submediana et radiali tantum relictis), stigma hyalina quartam partem costæ occupat.

Var. ♀ caput rufum, facie flavo-lineatum, mandibulis fulvis,

apice nigris, valvulis oviductûs piceis, longitudine thoracis et abdominis conjunctim. (Habitat in Malabaria. Communic. Dom. Newman.)

The obsolete veining of the wings of this insect will be regarded as a generic character by those who adopt the genera separated from *Evania*.

PAXYLLONMA, Brebisson.

Plancus, Curtis. *Hybrizon*, Esenb. (partim), Fallen.

This curious little genus, in its 13-jointed antennæ and long slender abdomen, attached higher than in the ordinary *Ichneumonidæ*, as also in the elongated and compressed hind legs, offers a certain degree of relation with some of the above genera. The form of its mandibles, however, the shortness of its 4-jointed maxillary and 3-jointed labial palpi, and especially the union of the postcostal vein with the costa of the fore wings, sufficiently indicate its relation with the adscitous *Ichneumonidæ*,—the position of the submarginal cells of the fore wings is anomalous, the second of these cells, being obliterated; but *Microdus* (*Bassus calculator*, Curtis) and *Microgaster* show us that this cell is liable to a diminution of size. The number of joints of the antennæ is greatly diminished in some of the most aberrant of the *Adsciti*, there being not more than eleven in some of the species of *Aphidius*. The form of the abdomen, and more especially the place of its insertion on the metathorax, we have seen, affords no exclusive character of the family *Evaniidæ*. So that I think we are justified in rejecting *Paxylloma* from that family.

I have represented the typical species *P. buccata* in my "Introduction to the Mod. Classif. of Insects," vol. ii. p. 134, fig. 74, 17, 18, from a specimen kindly sent me by M. Wesmael.
